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ABSTRACT

With mandatory reporting of child abuse, children are becoming involved more frequently in the judicial system, a system that is often unresponsive to the needs and limitations of young children. This investigation explored the effect of courtroom environment on the quality of evidence children offer and the level of system-induced stress that they experience. Eighty-one 8-to-10-year-olds participated in a classroom activity and 2 weeks later were questioned regarding their memory for the activity. The children (44 males, 37 females) were recruited from public elementary schools in a middle to upper middle class suburban area in Southern California. Half were questioned in a courtroom and half were questioned in a small, private room. Memory performance, state anxiety, perceptions of court-related stress, and heart rate patterns were compared across interview conditions. Data suggest that a child's ability to provide complete, accurate testimony may be affected by the psychological and physical setting in which the evidence is elicited. Impaired free recall and more reactive heart rate patterns, indicative of a stress response, were associated in the courtroom setting in comparison to a small private room. It is suggested that innovative methods for preparing child witnesses and for modifying standard courtroom procedures to provide an opportunity for children to testify to the best of their ability. Contains 25 references and 3 tables. (JBJ)

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Contextual Influences on Children's Testimony

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Contextual Influences on Children's Testimony

With mandatory reporting of child abuse, children are becoming involved more frequently in the judicial system, a system that is often unresponsive to the needs and limitations of young children (Whitcomb, Shapiro, & Stellwagen, 1985). To accommodate the child witness, modifications of the courtroom environment have been proposed, such as testimony via closed circuit television (Maryland v. Craig, 1982) and closing the courtroom to spectators (Globe Newspaper Co. v. Superior Court, 1982). Such legal reforms are thought to facilitate reliable testimony and reduce system-induced stress. However, there is little empirical research to guide reform efforts. In response to this need, we conducted the present investigation to explore the effect of courtroom environment on the quality of evidence children offer and the level of system-induced stress that they experience.

Until recently, guidance from traditional investigations of children's memory has been limited because researchers strove to study memory in its purest form, uninfluenced by emotional and contextual factors. Recently, researchers have begun to investigate the notion that context is not simply the place in which remembering occurs, but it is a constituent of memory itself (Ceci, Bronfenbrenner, & Baker, 1988). The physical and psychological setting in which remembering transpires influences ability to recall. For example, researchers found that children's uses of prospective memory strategies were far less efficient in an unfamiliar laboratory setting than in the child's home. They speculated that the laboratory setting induced anxiety incompatible with the deployment of the memory strategy under study. Studies such as these call into question the ecological validity of previous results for generalization to

cases of child abuse. Also, these data imply that children's competence to testify will be, in part, a function of the setting in which questioning occurs.

There has been much speculation that stress is a likely mediator of memory performance in the forensic context. High levels of stress are thought to decrease attention, to reduce motivation, or to interfere with efficient memory searches (Dent, 1977; Goodman, Hirschman, Hepps, & Rudy, 1991; Saywitz & Snyder, 1993). Most studies have focused on children's memory for stressful events rather than the effects of stressful recall environments. However, different mental processes may be operative when the locus of stress is the retrieval context as opposed to the event to be remembered (Davies & Thomson, 1988).

There are few ecologically valid studies germane to this issue. Those that exist suggest that children's ability to identify an unfamiliar adult may be impaired by characteristics of the physical and social setting (Dent, 1977; Peters, 1991, Experiment 4). These studies begin to suggest that children may be unable to testify at their highest level of competence in anxiety-provoking, unfamiliar settings, such as the courtroom (Hill & Hill, 1987). On the other hand, free recall and responses to questions about past autobiographical events may be robust in the face of transient emotional states, and little differences would be noted as a function of setting. This may be especially true of children's responses to direct questions, which offer ample recall cues. In contrast, the formality of the courtroom is assumed to promote testimony by underscoring the seriousness of the task. This could result in improved performance by children.

The present study is an attempt to explore the premise that the courtroom environment affects children's ability to testify, their perceptions of the stress of testifying, and physiological correlates of anxiety during testimony. Eighty-one

eight- to ten-year-olds participated in a classroom activity and two weeks later were questioned regarding their memory for the activity. Half were questioned in a courtroom and half were questioned in a small, private room. Memory performance, state anxiety, perceptions of court-related stress, and heart rate patterns were compared across interview conditions.

Method

Subjects

Eighty-one 8- to 10-year-old children participated in this study (M = 108.9 mos., SD = 9 mos.). There were 44 males and 37 females. The sample was 86% Caucasian, 12% Hispanic, and 1% Asian. The children were recruited from public elementary schools in a middle to upper middle class suburban area in Southern California. Their parents/guardians were contacted through the schools by letter for written consent. Children then gave their verbal and written assent prior to participation in the study.

Design

A 2 x 2 design was implemented to evaluate the effects of the environment and gender on children's memory and anxiety. Children were randomly assigned to one of two interview environments; courtroom interview (N=41) or interview in a small private room (N=40). Children's memory was tested with two memory tasks; free recall followed by specific questions. Anticipatory anxiety was measured by self-report on the State-Trait Anxiety Inventory for Children (STAIC Form C-1) (Speilberger, Edwards, Montuori, & Lushene, 1970) and the Court-Related Stress Scale (Saywitz & Nathanson, 1993). Anxiety during recall was measured by heart rate standard deviations that served as an index to heart rate variability (HRV).

Staged Event

The stimulus to be remembered was a thirty minute staged event in which children were taught about the parts and functions of the human body by a male research assistant. The event included activities that involved bodily touch such as, measurement of heart rate, visual inspection of the esophagus, and listening to the lungs, so that later questioning of the children could resemble questions typically asked of children suspected of being abused. For example, "Where did he touch you?" or "Did he put something in your mouth?". The event was videotaped each time it occurred for later comparison to the children's memory.

Measures

Wide Range Assessment of Memory and Learning (WRAML). The WRAML, a standardized psychometric test of memory and learning ability, was administered to ensure that all children's memory functioning was within normal range and that groups were comparable on general memory function. The Screening Form, a short form comprised of Picture Memory, Design Memory, Verbal Learning, and Story Memory was utilized. Subtest scaled scores were computed and transformed into a Memory Screening Index. In the normative sample, Memory Screening Indices range from 47 to 154 (M = ??) for the age range sampled in this study.

Legal Knowledge Test. The Legal Knowledge Test (Saywitz & Nathanson, 1993) was administered to assess children's level of knowledge about the investigative and judicial process prior to participating in the study. The scoring system is modeled after the scoring system of the vocabulary subtest of the WISC-R. Responses to each of 35 questions were scored as two, one, or zero, depending upon the degree of understanding demonstrated. Two

points were given for a correct, well established answer, involving defining features of the concept (e.g., "a crime is when someone breaks the law"); one point was given for a correct but vague or less relevant answer (e.g., "a crime is when someone breaks the rules"); and zero points were given for an incorrect answer (e.g., "a crime is something you do in court"). Item scores were summed.

Court Experiences Questionnaire. The Court Experiences Questionnaire (Saywitz & Nathanson, 1993) was administered to assess children's experience with the investigative and judicial process prior to participating in the study. Scores served as an indicator of one source of children's knowledge about the legal system. Children were questioned about each of 9 legal experiences (e.g., testifying in court). Each response was scored as follows: Active participant = 3, such as a victim or witness; Active observer = 2, such as being the relative or friend of a victim or witness; Passive observer = 1, for example if the child was a participant in a field trip to a courtroom; and no previous experience = 0. Scores served as an indicator of one source of children's knowledge about the legal system.

Self Perception Profile for Children. This standardized measure (Harter, 1985) was administered to explore the relations among self image, memory performance, and stress. A global self-worth score measuring the extent to which a child likes himself as a person, is happy in the way he is leading his life, and is generally happy with the way he is, was obtained. This scale has a mean value of approximately 2.9 and a standard deviation of approximately .60 for the age range of the children sampled in this study.

Social Support Scale for Children. This standardized measure (Harter, 1985) was utilized to explore the relations among perceived social support,

memory performance, and anxiety in a courtroom and non-courtroom setting. This scale measures children's perceptions of the support provided by significant others, such as parents, teachers, classmates, and close friends. This scale has a mean value of approximately 3.0 and a standard deviation of approximately .60 for the age range of the children sampled in this study.

Children's Social Desirability Scale (CSDS). The CSDS (Crandall, Crandall, & Katkovsky, 1965) was administered to assess children's social desirability. This instrument consists of 47 yes/no questions such as "Are you always polite to older people?" or "Do you ever get angry?"

Memory Interview. A structured interview was developed to assess free recall and responses to specific questions about the staged event. A narrative of the staged event was elicited.[1] One prompt, "Is there anything else you can tell me about that time?" was given at the conclusion of the child's narrative.

Next 60 specific questions were administered: 19 direct questions unrelated to abuse (e.g., "What was the first thing you did when you walked into the room?"); 17 leading questions unrelated to abuse (e.g., "The man was in the room with you, wasn't he?"); and 24 abuse-related questions ranging from highly suggestive to non-leading (e.g., You took your clothes off to play the body parts game, didn't you?; Which part of his clothes did the man take off?"). Thirty-three of the questions required a yes/no response and 27 of the questions required short answers. The questions, modeled after questions typically asked in actual witness interviews, elicited information about the participants, objects, and actions involved in the staged event (see Appendix A).

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[1] "Do you remember the day at your school when you left your classroom and went into a new room with some kids from your class? There were big crayons hanging on the wall in the room. Do you remember that? I want you to tell me everything you remember about that time."

Court- Related Stress Scale. The Court-Related Stress Scale (Saywitz & Nathanson, 1993) was administered to assess children's perceptions of the degree of stress associated with various court-related experiences such as "having an attorney ask you questions in court" or "answering embarrassing questions in court". This 37 item instrument is comprised of 17 court-related experiences embedded among 20 life experiences from the Stressfullness of Life Events Scale (Yamamoto & Byrnes, 1987).

Children rated each experience on a five point scale (5 = very very stressful; 1 = not stressful, not upsetting). Stressful was defined as something "upsetting" or that "bothers you." Variously grimacing faces were used instead of numbers to represent ratings from not stressful to very very stressful. Each experience was read aloud, one at a time, by an interviewer, and children were instructed to put an X on the corresponding face to reflect how stressful they perceived the event to be. Children's responses on the 17 Court-related items were summed to create a score on the Court-Related Stress Scale.

State-Trait Anxiety Inventory for Children (STAIC). The STAIC (Speilberger, 1970) was administered to measure state and trait anxiety. Raw scores on the STAIC range from 20 to 60, with 60 reflecting the most anxiety. This scale has a mean score of approximately 37 for the age range sampled here.

Heart rate. A Bio Tachometer was used to measure continuous heart rate while children were being interviewed. An ear clip was attached to the child's earlobe and the Bio Tach Rate Meter measured and recorded heart rate beat by beat. Heart rate readings from the equipment sensors were fed through digital readout monitors directly into an IBM personal computer and recorded at

1/10-second intervals throughout the interview. Heart rate standard deviations were calculated and served as an index to heart rate variability (HRV).

Interview Performance Assessment (IPA). The IPA (Saywitz & Nathanson, 1993) was administered to assess children's perceptions of the interview. This 19 item measure assesses children's perceptions of the interviewer's expectations, his perceptions of them, and their perceptions of their own performance. For example, "Did you feel he wanted you to answer some of the questions in a certain way?"; "How much do you think he liked you?"; and "How well do you think you did answering questions?" Children respond in a five point likert scale format.

Procedure

Children, randomly assigned to groups of four, participated in the staged event in an empty classroom at their school with a male research assistant. During the staged event, children's heart rate was recorded four times at 30 second intervals over a two minute period. A mean of these heart rates yielded each child's baseline heart rate score.

During the next week, children were taken out of their classroom by a research assistant who was not involved in the staged event for approximately 40 minutes. The WRAML, Legal Knowledge Test, Court Experiences Questionnaire, and STAIC (Form C-2) were administered individually in an empty classroom.

Two weeks after participating in the staged event, all children were taken on a field trip to a University Law School. First, the Self Perception Profile for Children, Social Support Scale for Children, and CSDS were administered in an empty classroom adjacent to a mock courtroom.

Each child in the small room condition was then shown the small room where another child was being questioned. Each child in the courtroom condition was shown the courtroom which simulated a trial environment, including the use of actors for the judge, attorney, bailiff, jurors/spectators, and a child being questioned on the witness stand. Each child was then told they were going to be questioned next. Returning to the waiting room, the Court-Related Stress Scale and STAIC (Form C-1) were administered individually as measures of anticipatory anxiety.

Prior to questioning, the bailiff walked each child assigned to the courtroom interview condition to the witness stand where they took an oath to tell the truth. An earclip was then attached to the child's earlobe to measure continuous heart rate during questioning. Then children were questioned from a lectern by a male law student dressed formally in a dark suit.

Children in the small room condition returned to a small empty room adjacent to the courtroom, where they were seated across a table from the same male law student that questioned the children in the courtroom interview condition. An earclip was then attached to the child's earlobe to measure continuous heart rate during questioning. Care was taken to ensure that the interviewer displayed the same demeanor in both conditions. For both conditions, the same free recall instructions were given first, followed by the same 60 specific questions. All interviews were audio and videotaped.

At the conclusion of the interview, children in both conditions were escorted to the waiting room for administration of IPA. At the conclusion of the data collection phase, children were debriefed regarding the full nature of the study. In addition, they engaged in a brief lesson about testifying in court, which included role-playing various roles in the courtroom, such as judge, attorney,

and witness. Throughout the study children were aware that they were participating in an experiment, not an actual trial.

Data Reduction

Free Recall. A 105 item checklist of the participants, objects, and actions involved in the staged event was generated from the script of the staged event by the authors. Then, the videotape of each staging was viewed to note any deviations from the script. Thus, children's memories were compared to the videotape of the precise staged event in which they participated. Audiotapes of the interviews were transcribed. Children's free recall responses were scored as correct based upon the co-occurrence of recall with individual items on the verified checklist. For example, "The man listened to my heart with the stethoscope" was scored as four correct points because it corresponds to four items on the checklist, a participant, action, and two objects (e.g., heart and stethoscope), respectively.

Free recall responses were scored as incorrect if they were vague, irrelevant information or if they erroneously co-occurred with individual items on the checklist. For example, "The man listened to my lungs with the stethoscope" was scored as three correct points and one error because it corresponds correctly to three items on the checklist but erroneously recalls "lungs" instead of "heart".

Specific questions. Children's responses to specific questions were scored as correct, incorrect, or "don't know/don't remember."

Heart rate. All heart rates of less than 40 and greater than 165 were attributed to equipment error and deleted from the data set. Approximately eight percent of the data points from the sample fell into these ranges and were deleted. Heart rate standard deviations were then calculated for each child

and served as an index to heart rate variability (HRV). Individual differences in interview time resulted in differences in the number of heart rates generated per child (range = 300 to 700 beats) from which the mean standard deviations of heart rate were calculated.

Interrater Reliability. Two coders blind to interview condition coded 25% of the memory protocols. 91% point by point interrater reliability was obtained on free recall and 93% agreement was obtained on responses to specific questions.

Results

Preliminary Analyses

To better understand the nature of the sample, preliminary analyses were conducted to ensure that environment conditions were comparable on memory ability, legal knowledge, prior court experience, self image, perceived social support, trait anxiety, and social desirability. No significant differences between the two groups were found. Means and statistical test results are depicted in Table 1.

Memory

To analyze the effects of interview environment on memory performance, two 2 X 2 (interview environment X gender) multivariate analyses of variance (MANOVAs) were conducted. In the first, the amount of correct free recall and the number of correct responses to specific questions were entered as dependent variables. In the second, free recall errors and the number of incorrect responses to specific questions were entered as dependent measures. Table 2 displays these means and statistical test results.

Correct recall. The first MANOVA revealed a significant effect of interview environment, $F(2,76) = 8.00$, $p < .001$. Univariate tests of free recall revealed

that children interviewed in the courtroom recalled significantly less correct information than children interviewed in the small, private room (M_C = 5.11, SD_C = 5.16; M_{NC} = 9.90, SD_{NC} = 6.22); $F(1,77) = 6.18$, $p < .001$. Moreover, significantly more children interviewed in the courtroom (26.83%) did not recall the staged event at all in response to free recall instructions as compared to children interviewed in the small, private room (7.50%), $x^2(80) = 5.29$, $p < .05$. Responses to the total set of specific questions were not affected by interview condition.

There was a significant interview environment effect, however, on the number of correct responses to the subset of non-leading questions. Children interviewed in the courtroom responded correctly to objective questions significantly less than children interviewed in the small, private room (M_C = 9.71, SD_C = 3.26; M_{NC} = 10.91, SD_{NC} = 2.25); $F(1,77) = 4.02$, $p < .05$. Responses to the subsets of leading and abuse-related questions were not affected by interview condition.

Errors. A second MANOVA conducted on errors in free recall and incorrect responses to specific questions failed to show any significant effects.[2] Exploratory analyses of variance were conducted on incorrect responses to subsets of the specific questions (leading, non-leading, or abuse-related questions). No significant differences between the two interview environment conditions emerged.

Don't Know. An ANOVA conducted on "I don't know" responses to specific questions revealed an interaction effect, with females in the court condition responding to specific questions with "I don't know" significantly more

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[2] Univariate tests on incorrect responses to specific questions, however, revealed a significant gender effect, with males responding incorrectly to specific questions significantly more often than females (M_M = 15.44, SD_M = 4.66; M_F = 13.25, SD_F = 4.46); $F(1,77) = 4.44$, $p < .05$.

often than males interviewed in court or females or males interviewed in the small, private room (M_{CF} = 10.92, SD_{CF} = 8.95; M_{CM} = 6.30, SD_{CM} = 4.30; M_{NCF} = 7.06, SD_{NCF} = 4.55; M_{NCM} = 7.86, SD_{NCM} = 4.25; $F(1,77) = 4.64$, $p < .05$).

In sum, 8-to-10 year olds who were interviewed at court showed significantly less complete free recall than agemates questioned in a small, private room. There were no significant differences between the two environment conditions on errors in free recall or incorrect responses to direct questions.

Anxiety

To analyze the effects of environment on children's anxiety level, two self report and one physiological measure of anxiety were analyzed. Scores on the STAIC (Form C-1); the Court-related Stress Scale, and SD of heart rate were entered into a 2 X 2 (interview environment X gender) MANOVA. Means and statistical test results are displayed in Table 3.

Analyses revealed a significant effect of interview environment, $F(3,72) = 5.91$, $p < .001$. Univariate tests of SD of heart rate revealed that children interviewed in the courtroom showed significantly more heart rate variability (HRV) than children interviewed in a small, private room (M_C = 13.88, SD_C = 7.54; M_{NC} = 7.91, SD_{NC} = 4.18); $F(1,74) = 17.42$, $p < .0001$.

Univariate tests of the Court-related Stress Scale revealed a significant gender effect, with females reporting significantly greater anticipatory anxiety associated with various courtroom experiences than males , (M_F = 59.37, SD_F = 11.95; M_M = 53.14, SD_M = 13.64); $F(1,77) = 4.33$, $p < .05$.

Univariate tests of the individual items on the Court-related Stress Scale revealed a significant interview environment effect, with children interviewed in the courtroom rating "Not understanding what you are supposed to do in the

courtroom" as significantly more stressful than children interviewed in the small, private room ($M_C = 3.53$, $SD_C = 1.22$; $M_{NC} = 3.05$, $SD_{NC} = 1.34$); $F(1,74) = 3.94$, $p < .05$. Females also rated this item as significantly more stressful than males ($M_F = 3.71$, $SD_F = 1.18$; $M_M = 2.93$, $SD_M = 1.30$); $F(1,74) = 8.92$, $p < .01$. In addition, females rated "Answering embarrassing questions in court" ($M_F = 4.11$, $SD_F = 0.99$; $M_M = 3.40$, $SD_M = 1.40$); $F(1,74) = 6.70$, $p < .01$ and" Answering questions in front of a person who hurt you" ($M_F = 3.69$, $SD_F = 1.28$; $M_M = 3.02$, $SD_M = 1.39$); $F(1,74) = 4.27$, $p < .05$ as significantly more stressful than males. No other effects reached significance.

IPA

Analyses on questions on the IPA assessing anxiety (questions seven and eight) revealed a significant gender effect, with females reporting more anxiety than males, $F = 13.96$, $p < .0005$.

Relationship of Self-Perception and Social Support to Anxiety and Memory

In exploring the role of self-perception and social support as mediators of the relation between anxiety and memory, Pearson product-moment correlations revealed a significant negative relationship between self-perception and anticipatory anxiety as reported on the STAIC (Form C-1), $r = -.34$, $p < .01$ and perceived social support and anticipatory anxiety, $r = -.26$, $p < .02$. Thus, the greater one's self-perception and perceived social support, the less anticipatory anxiety they reported. Perceived social support was also found to be positively correlated with responses to specific questions, $r = .23$, $p < .05$. The stronger children perceived their social support network to be, the more frequently they responded correctly to specific questions.

A significant negative relationship was also found between heart rate reactivity and responses to specific questions, $r = -.27$, $p < .01$. The more

variable children's heart rate reactivity indices were, the less frequently they responded correctly to specific questions.

In sum, the greater children's self-perception and social support, the less anticipatory anxiety they reported and the more often they responded correctly to specific questions. Moreover, the smaller their heart rate reactivity, the greater their correct responses to specific questions.

Discussion

These data suggest that a child's ability to provide complete, accurate testimony may be affected by the psychological and physical setting in which the evidence is elicited. Consider the following: A given instance of memory performance is influenced not only by allocation of attentional resources, but also by transient emotional states induced by children's perceptions of the context and their appraisal of their ability to cope with the situation. At a given moment of deliberate remembering, children are involved in a variety of tasks at multiple levels of processing. They make a metacognitive appraisal of the task (e.g., consequences of error, amount of effort required). Then, memory is searched, retrieval strategies are generated and results evaluated. Simultaneously, children experience a feeling state that has the potential to influence attention, effort motivation, and efficiency of cognitive activity. In this view, transient emotional states, such as anxiety, can be triggered by the children's perceptions of the situation as frightening vis-à-vis their perception of their own ability to succeed in the task and to overcome their fears.

In the present study, impaired free recall and more reactive heart rate patterns, indicative of a stress response, were associated in the courtroom setting in comparison to a small private room. Thus, the notion that transient emotional states (e.g., anxiety) are responsible for the disruptions in memory

performance (e.g., retrieval difficulty in free recall) continues to be worthy of further exploration.

Although children's self-report of anticipatory anxiety and their general perceptions of the stress of courtroom experiences were not affected by interview condition, differential heart rate reactivity across interview condition suggests the children in court were experiencing a physiological reaction to the experience of being questioned in court, not found among children questioned in the non-court setting. Such reactivity can be associated with stress and agitation (Bautt, Hackett, & Warren; Beidel, 1988; Matthews, Manuck, & Saab, 1986; Simpson, Ruzicka, & Thomas; Speilberger, 1975; and Thomas, Lynch, Friedman, Suginohara, Hall, Peterson, 1984).

The fact that self-report measures of anticipatory anxiety and responses to direct questions did not differ across settings were not wholly unexpected. Discrepancies between physiological data and self-report data are not uncommon in this literature as both children and adults may not admit to feelings they are experiencing if they perceive the feelings to be socially undesirable (Abu-Saad & Holzemer, 1981; Douglas, Lindsay, & Brooks, 1988; Jay & Elliot, 1986; Winer, 1982).

This experimental paradigm did not create the complexities of a real trial nor the feeling states of an actual victim-witness. In actual cases, memory impairment and stress responses may be even greater. It is possible that a certain threshold of anxiety must be reached before responses to questions and self-report are affected. Perhaps sufficient anxiety was created to interfere with free recall, but not responses to direct questions that provide ample retrieval cues and are less vulnerable to disruption. Likewise, sufficient anxiety may

have been created to interfere with heart rate patterns, but it was not sufficient for the experience of stress to reach conscious awareness and verbal report.

Taken as a whole, these results call for future research regarding the hypothesis that anxiety associated with certain characteristics of the setting may influence the quality of evidence children provide and the level of stress they experience. Furthermore, children's perception of self image and social support are potentially mediating factors to be examined.

Implications for Cases of Suspected Child Abuse

The physical and psycho-social context of the courtroom is presumed to promote a complete and accurate telling of the truth. This may not be the case when the witness is a child. Our findings highlight the need to develop innovative methods for preparing child witnesses and for modifying standard courtroom procedures to provide an opportunity for children to testify to the best of their ability. For example, these findings lend support to the notion that testifying via closed circuit television from a room outside the courtroom could produce more reliable testimony from some children. Studies that vary separate components of the courtroom experience (e.g., familiarity, formality, presence of support persons or spectators) could guide reform efforts. For example, if the quality of children's evidence varies with the presence of spectators or support persons, in interaction with individual differences among children, then guidelines for closing of the courtroom to spectators or allowing support persons during testimony could be developed.

Additionally, these data shed light on some of the inconsistencies commonly noted in children's statements. The results suggest that one source of inconsistency in children's statements is due to variations in the environment in which questioning occurs. Perhaps more complete and detailed reports are

to be expected in the statements gathered from interviews held in familiar, private, informal settings than from testimony offered in the courtroom. If replicated with a more powerful manipulation of court-related stress, the results could confirm that children's reports should be expected to vary as a function of setting, not necessarily honesty.

Contrary to these results, several clinical tools for assessing allegations of child abuse cite inconsistency as a criteria indicative of false allegations (Gardner, 1987; Yuille, 1989). Moreover, studies suggest that jurors believe inconsistency affects witness credibility (Goodman, Golding, & Haith, 1984; Lieppe & Romanczyk, 1987). In light of the results of this study, the practice of equating children's reliability with consistency across settings should be re-evaluated.

As a society, we have a responsibility to create an environment that maximizes the completeness and accuracy of children's testimony and minimizes the stress placed on children in the process. Our hope is that expanded theories and further research regarding the influence of context and emotion on children's memory will provide direction for the implementation of legal reforms, reforms that enhance discovering the truth and safeguarding children's well-being.

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Table 1

Mean Scores on Preliminary Measures by Interview Condition

	Interview Condition		
Measure	Court	Non-Court	F
WRAML	89.46 (13.62)	93.45 (13.15)	1.34
Legal Knowledge Test	16.24 (7.97)	17.41 (7.25)	0.77
Court Experiences Questionnaire	7.20 (3.27)	8.14 (4.49)	1.61
Self Perception Profile for Children	3.44 (0.57)	3.47 (0.51)	0.04
Social Support Scale for Children	3.40 (0.41)	3.44 (0.48)	0.20
STAIC Form C-2	36.80 (9.17)	34.97 (6.54)	0.88
CSDS	23.32 (9.74)	26.18 (9.41)	1.43

Note. Standard deviations appear in parentheses.

Table 2

Mean Number of Items Recalled During Free Recall and Specific Questions by Interview Condition

Memory Measure	Interview Condition		
	Court	Non-Court	F
Free recall			
Correct	5.11 (5.16)	9.90 (6.22)	15.81*
Incorrect	0.32 (0.69)	0.63 (0.83)	3.09
Specific Questions			
Correct	35.66 (6.82)	36.76 (4.74)	0.93
Incorrect	14.58 (5.15)	14.29 (4.19)	0.00
Don't Know	8.21 (6.93)	7.46 (4.37)	0.84

Note. Standard deviations appear in parentheses.

* $p < .001$.

Table 3

Mean Values on Measurements of Anxiety by Condition

	Condition		
Anxiety Measure	Court	Non-Court	F
STAIC Form C-2	30.95 (5.21)	30.45 (5.11)	0.29
Court-Related Stress Scale	56.00 (11.87)	55.88 (14.50)	0.04
Heart Rate Reactivity Index	13.88 (7.54)	7.91 (4.18)	17.42**
	Male	Female	
STAIC Form C-2	30.51 (5.02)	30.91 (5.34)	0.18
Court-Related Stress Scale	53.14 (13.64)	59.37 11.95)	4.33*
Heart Rate Reactivity Index	11.31 (7.03)	10.22 (6.37)	0.12

Note. Standard deviations appear in parentheses.

* $p < .05$. **$p = .0001$.